

The Scottish Mathematical Council

www.scot-maths.co.uk

MATHEMATICAL CHALLENGE 2016–2017

Entries must be the unaided efforts of individual pupils.

Solutions must include explanations and answers without explanation will be given no credit.

Do not feel that you must hand in answers to all the questions.

CURRENT AND RECENT SPONSORS OF MATHEMATICAL CHALLENGE ARE

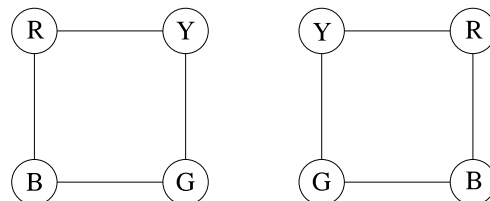
*The Edinburgh Mathematical Society, The Maxwell Foundation, Professor L E Fraenkel,
The London Mathematical Society and The Scottish International Education Trust.*

The Scottish Mathematical Council is indebted to the above for their generous support and gratefully acknowledges financial and other assistance from schools, universities and education authorities.

Particular thanks are due to the Universities of Aberdeen, Edinburgh, Glasgow, Heriot Watt, St Andrews, Stirling, Strathclyde and to Bearsden Academy, Kelvinside Academy and Northfield Academy.

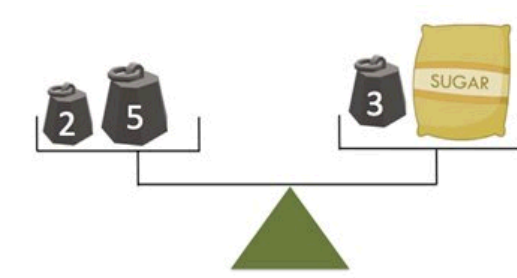
Primary Division: Problems II

- P2.1.** Four coloured beads, red, yellow, green and blue, are attached to the corners of a square. Two arrangements like those shown are considered to be the same because one square can be placed on top of the other by rotating and/or flipping so that the colours match. What is the total number of different arrangements (including the one shown)?



- P2.2.** A shopkeeper has a set of weights with values 200 grams, 300 grams and 500 grams.

Using these weights he can weigh different amounts: for example he can weigh 400 grams by putting the 200 gram and 500 gram weights on one side of the scales and the 300 gram weight and the bag to be filled on the other side.



And of course he can put one or more of the weights on one side of the scales and a bag to be filled on the other side.

Show that using these weights he can weigh all amounts from 100 grams to 1000 grams in steps of 100 grams except for one.

- P2.3.** James thought of three numbers. He told his friend that the first and second numbers added up to 37, the second and third added up to 53, and the first and third added up to 78. What were the numbers which James thought of?

END OF PROBLEM SET II

CLOSING DATE FOR RECEIPT OF SOLUTIONS :

Friday 25 November 2016

Look out for Problems III in January!

Look on the SMC web site: www.scot-maths.co.uk for information about Mathematical Challenge.



Mathematical Challenge Problems II

PRIMARY DIVISION

2016-2017

PLEASE USE CAPITALS TO COMPLETE

SURNAME

OTHER NAME(S)
(underline the one
you prefer)

SCHOOL

AGE

YEAR OF STUDY

FOR OFFICIAL USE

Marker

Marks

1	2	3	Total

— — — — - C U T A L O N G H E R E — — — —

Please write your solutions on A4 paper and staple the above form to them.

PLEASE WRITE YOUR NAME ON EVERY PAGE.

Send your entry through your school to the organiser of the section.

For further information on the competition, please see the Information Circular, which has been distributed to all primary schools. Please contact the local organiser, whose name and address are given above, or go to the web site if you require a further copy.
